

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original): An apparatus for flexibly suspending a sensing mechanism between a pair of cover plates, the apparatus comprising:

- a sensing mechanism formed in a crystalline substrate;
- a pair of cover plates formed in respective crystalline substrates and mounted on either side of the sensing mechanism;
- a first plurality of complementary interfaces between the sensing mechanism and a first one of the cover plates; and
- a second plurality of complementary interfaces flexibly suspended between the sensing mechanism and a second one of the cover plates, one or more of the flexibly suspended interfaces further comprising a complementary male and female interface.

Claim 2 (original): The apparatus of claim 1 wherein one or more of the second plurality of complementary interfaces further comprises a complementary interface that is flexibly deflectable away from the sensing mechanism for exerting a preload on the sensing mechanism.

Claim 3 (original): The apparatus of claim 1 wherein the first plurality of complementary interfaces further comprises a plurality of complementary interfaces fixed relative to the sensing mechanism and the first one of the cover plates.

Claim 4 (original): The apparatus of claim 1 wherein the first plurality of the complementary interfaces further comprises a plurality of mesas interfacing with a plurality of flats.

Claim 5 (original): The apparatus of claim 1 wherein the first plurality of the complementary interfaces further comprise an absolute reference plane.

Claim 6 (original): The apparatus of claim 1 wherein each of the pair of cover plates further comprises a cavity formed by a base and a wall extended along the edges of the base, the walls of the pair of cover plates interconnected along a centerline of the sensing mechanism to form a cavity for housing the sensing mechanism,

the first plurality of complementary interfaces being fixed between the sensing mechanism and the base of the first one of the cover plates, and

the second plurality of complementary interfaces being flexibly suspended between the sensing mechanism and the base of the second one of the cover plates; and

further comprising a bond joining the walls of the pair of cover plates.

Claims 7-29 (cancelled)

Claim 30 (new): An apparatus for flexibly suspending a sensing mechanism between a pair of cover plates, the apparatus comprising:

first, second and third crystalline wafers each having first and second substantially planar and parallel spaced apart opposing surfaces;

a sensing mechanism formed in the first crystalline substrate, the sensing mechanism being formed with a relatively stationary frame portion substantially surrounding an operational portion;

a pair of cover plates formed in the second and third crystalline substrates and mounted on either side of the sensing mechanism interfaced with the frame portion thereof;

a plurality of flat tipped male projections and complementary flats interfaced between the frame portion of the sensing mechanism and the first cover plate; and

a plurality of male projections and complementary female indentations flexibly suspended between the frame portion of the sensing mechanism and the second cover plate; and

a bond joint between the pair of cover plates.

Claim 31 (new): The apparatus of claim 30 wherein one of the male projections further comprises a truncated pyramid-shaped projection, and the complementary female indentation corresponding thereto further comprises a mating truncated pyramidal shaped recess.

Claim 32 (new): The apparatus of claim 31 wherein each of the truncated pyramid-shaped projection and complementary mating truncated pyramidal shaped recess further comprise substantially identical slopes.

Claim 33 (new): The apparatus of claim 32 wherein each of the first, second and third crystalline wafers further comprises an atomic lattice structure, and

the slopes of each of the truncated pyramid-shaped projection and complementary mating truncated pyramidal-shaped recess substantially follow the atomic lattice structure.

Claim 34 (new): The apparatus of claim 32 wherein each of the first, second and third crystalline wafers further comprises crystalline silicon.

Claim 35 (new): The apparatus of claim 32 wherein the first cover plate further comprises the plurality of flat tipped male projections interfaced with the complementary flats, and
the frame portion of the sensing mechanism further comprises the complementary flats.

Claim 36 (new): The apparatus of claim 35 wherein the second cover plate further comprises the plurality of male projections interfaced with the complementary female indentations, and

the frame portion of the sensing mechanism further comprises the complementary female indentations.

Claim 37 (new): The apparatus of claim 32 wherein each of the pair of cover plates further comprises a cavity formed by a base and a wall extended along the edges of the base, the walls of the pair of cover plates interconnected along a centerline of the sensing mechanism to form a cavity for housing the sensing mechanism,

the base of the first cover plate further comprises the plurality of flat tipped male projections interfaced with the complementary flats,

the first surface of the sensing mechanism further comprises the complementary flats,

the base of the second cover plate further comprises the plurality of male projections interfaced with the complementary female indentations, and

the second surface of the sensing mechanism further comprises the complementary female indentations; and
further comprising a bond joining the walls of the pair of cover plates.

Claim 38 (new): The apparatus of claim 37 wherein the plurality of flat tipped male projections further comprises a substantially absolute reference plane.

Claim 39 (new): An apparatus for flexibly suspending a sensing mechanism between a pair of cover plates, the apparatus comprising:

a pair of cover plates formed in respective crystalline silicon substrates each formed with a base surrounded by walls, an inner surface of the base of a first of the cover plates being formed with a plurality of flat tipped male projections, and an inner surface of the base of a second of the cover plates being formed with a plurality of male truncated pyramid-shaped projections;

a crystalline silicon substrate formed with a sensing mechanism suspended from a frame portion thereof, the frame portion having a first surface formed with a plurality of flats each complementary to one of the plurality of flat tipped male projections formed on the inner surface of the base of a first cover plate, and a second surface formed with a plurality of female truncated pyramidal-shaped indentations each complementary to one of the plurality of male truncated pyramid-shaped projections.

Claim 40 (new): The apparatus of claim 39 wherein each of the truncated pyramid-shaped projection and complementary mating truncated pyramidal-shaped indentations further comprise substantially identically sloped walls.

Claim 41 (new): The apparatus of claim 40 wherein the walls of the cover plates mate substantially along a centerline of the sensing mechanism with the sensing mechanism enclosed in a cavity formed therebetween.

Claim 42 (new): The apparatus of claim 41, further comprising a flexible suspension bracket flexibly suspending one or more of the plurality of male truncated pyramid-shaped projections relative to the base of the second of the cover plate.

Claim 43 (new): The apparatus of claim 42 wherein the flexible suspension bracket further comprises a Z-shaped flexible suspension bracket having the male truncated pyramid-shaped projection positioned approximately midline thereof.

Claim 44 (new): The apparatus of claim 45 wherein at least two of the male truncated pyramid-shaped projections are distributed on the inner surface of the base of the second of the cover plates.

Claim 45 (new): The apparatus of claim 44 wherein at least three or more of the male truncated pyramid-shaped projections are distributed in a regular pattern at spaced apart locations on the inner surface of the base of the second of the cover plates.

Claim 46 (new): An apparatus for flexibly suspending a sensing mechanism between a pair of cover plates, the apparatus comprising:

a crystalline silicon substrate formed with a sensing mechanism suspended from a frame portion thereof, the frame portion having a first surface formed with a plurality of flat tipped male projections, and a second surface formed with a plurality of male truncated pyramid-shaped projections; and

a pair of cover plates formed in respective crystalline silicon substrates each formed with a base surrounded by walls, an inner surface of the base of a first of the cover plates being formed with a plurality of flats each complementary to one of the plurality of flat tipped male projections, and an inner surface of the base of a second of the cover plates being formed with a plurality of female truncated pyramidal-shaped indentations each complementary to one of the plurality of male truncated pyramid-shaped projections.

Claim 47 (new): The apparatus of claim 46 wherein each of the truncated pyramid-shaped projection and complementary mating truncated pyramidal-shaped indentations further comprise substantially identically sloped walls.

Claim 48 (new): The apparatus of claim 47 wherein the walls of the cover plates mate substantially along a centerline of the sensing mechanism with the sensing mechanism enclosed in a cavity formed therebetween.

Claim 49 (new): The apparatus of claim 48, further comprising a flexible suspension bracket flexibly suspending one or more of the plurality of male truncated pyramid-shaped projections relative to the frame portion having the sensing mechanism suspended therefrom.

Claim 50 (new): The apparatus of claim 49 wherein the flexible suspension bracket further comprises a Z-shaped flexible suspension bracket having the male truncated pyramid-shaped projection positioned approximately midline thereof.

Claim 51 (new): The apparatus of claim 50 wherein at least two of the male truncated pyramid-shaped projections are distributed on the frame portion.

Claim 52 (new): The apparatus of claim 51 wherein at least three or more of the male truncated pyramid-shaped projections are distributed in a regular pattern at spaced apart locations on the frame portion.